



## **Bosch Commercial and Industrial**

Climate 5000 VRF – Air conditioning heat pump and heat recovery VRF systems



**BOSCH**

Invented for life



# Build the complete solution

Discover new opportunities: Bosch is now offering not only heating and hot water, but also VRF (Variable Refrigerant Flow) systems for efficient air conditioning in commercial buildings. As part of the VRF range we will also introduce a heat recovery ventilation unit which can be easily integrated with the VRF system. This opens up attractive prospects for you and even greater benefits from the expertise of Bosch.

## **Ideal room climate at the touch of a button**

Thanks to variable refrigerant flow technology, the new Bosch VRF air conditioning systems are convenient and save valuable energy at the same time. They adapt their performance to current demand and therefore also work with outstanding efficiency under partial load. The systems consist of outdoor units and several inside units and can be utilised for both cooling and heating. These new solutions from Bosch therefore play a decisive role in ensuring that people in all areas of large buildings enjoy a comfortable climate, independent of the seasons of the year.



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### **Efficiency from a single provider**

If you are looking for an industrial boiler, a combined heat and power system or high-efficiency VRF air conditioning, Bosch has a multitude of solutions to meet your precise needs. But that's not all: Bosch also realises customised package solutions with perfectly harmonised components and technology from one single provider. This means that you can comprehensively exploit all existing efficiency potentials. The result: your energy costs are permanently kept at a low level and you make a sustainable contribution to protecting the environment.

### **The future: made by Bosch**

Bosch enjoys a worldwide reputation for highest-quality products and services. Global organisation and production standards guarantee uncontested approval and problem-free operation of your large-scale systems from Bosch. Thanks to the enormous importance and long tradition of innovation, you benefit from the unique, pioneering spirit of Bosch engineering and technology. Advanced technology and the high quality of your new VRF system from Bosch thus ensure long-term fulfilment of its users' expectations.

# Bosch Climate 5000 VRF

The Bosch Climate 5000 VRF range incorporates a host of advanced technologies to deliver exceptional performance for the end user, combined with ease of installation, commissioning and maintenance for the air conditioning engineer.



## Key features of the range

- ▶ High efficiency
- ▶ Low noise levels
- ▶ Extended pipework lengths
- ▶ Unique outdoor unit designs
- ▶ Wide capacity range
- ▶ Wide operational temperature range.

The Bosch Climate 5000 VRF family comprises four key models, each available in a range of variants to suit the precise needs of each project. These models are:

### **SDCI Series – All DC Inverter Heat Pump**

An all-DC VRF heat pump system using DC inverter compressors, combined with DC fan motors for added energy efficiency. Also available in capacities from 8 HP/25kW to 72 HP/200kW and capable of operating up to 64 indoor units on one system.

### **MDCI Series – All DC Inverter Mini VRF**

A mini VRF heat pump air conditioning system using DC inverter compressors and DC fans, ideal for small offices and retail premises as well as larger domestic properties. Up to 12 indoor units can be operated in one system, with capacities ranging from 8kW to 26kW.

Bosch Climate 5000 VRF selection software is available to help designers and installers select the best solutions for their projects.

### **RDCI Series – All DC Inverter Heat Recovery**

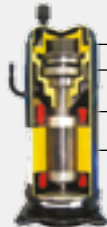
All-DC inverter heat recovery three-pipe VRF system, providing simultaneous cooling and heating operation in one system. Capacities range from 8 HP/25kW to 64 HP/180kW and up to 64 indoor units can be operated in one system.

# Advanced features for exceptional performance

All Bosch Climate 5000 VRF systems incorporate sophisticated technologies to deliver improved performance over and above that of less advanced systems.

## High efficiency DC inverter compressor

Bosch Climate 5000 VRF air conditioning system offers high class energy efficiency for cooling and heating by utilising brushless DC compressor control, innovative designed heat exchanger and several high performance parts. High efficiency DC inverter scroll compressor reduces power consumption by 25%.

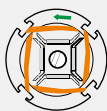


- New structure enhances mid-frequency performance
- Specially designed scroll profile for R-410A
- More compact, weight reduced by 50%
- Advanced permanent magnet DC motor improves low-frequency band performance

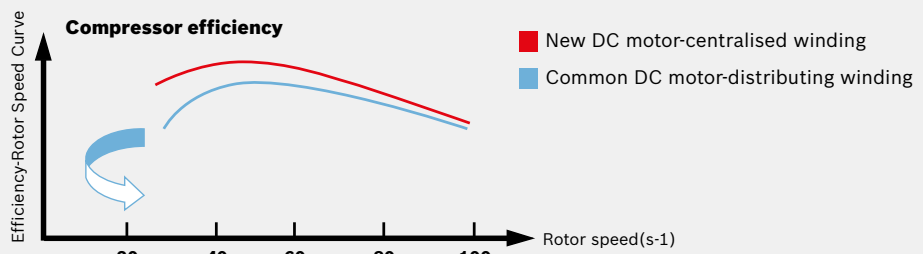
Powerful magnets provide high torque and efficiency and achieve 70% reduction in volume.



Centralising winding

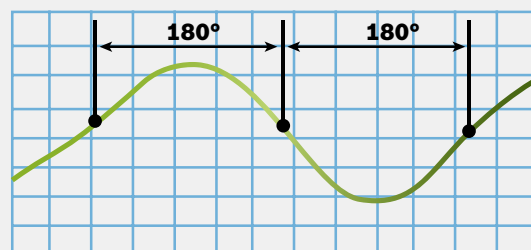
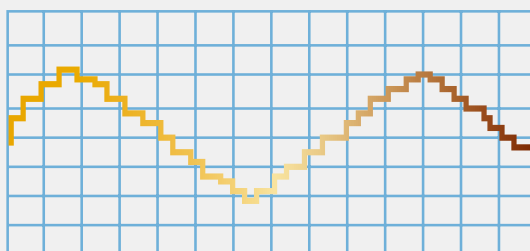


Distributing winding



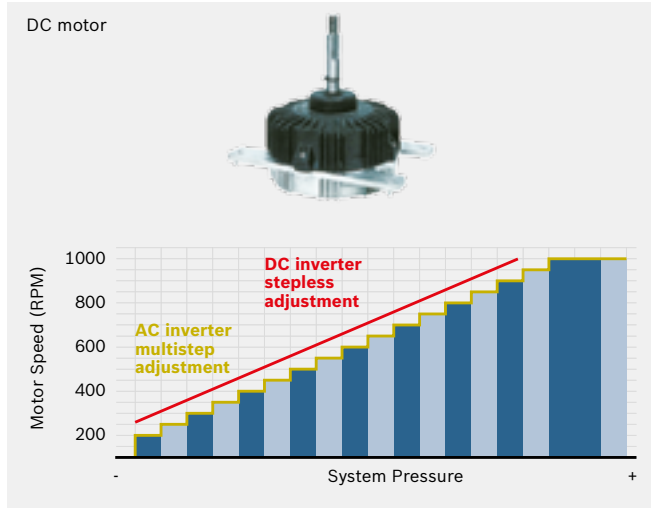
## Smooth 180° sine wave DC inverter

Adopting the 180° Sine Wave Inverter to smooth motor rotation greatly improves operating efficiency compared with traditional sawtooth wave.



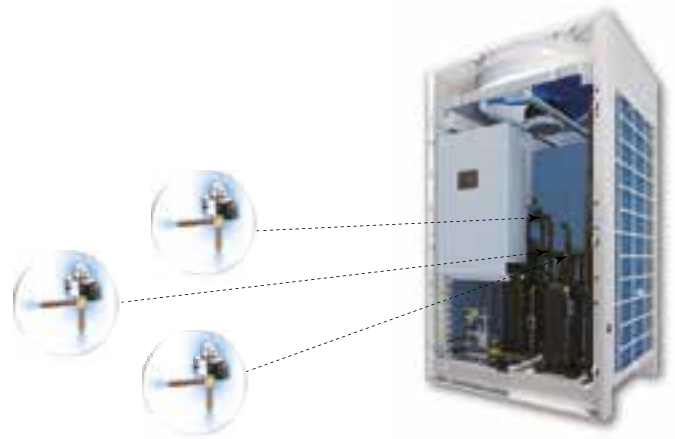
### High efficiency DC fan motor

According to the running load and system pressure, the system controls the speed of DC fan to achieve the minimum energy consumption and best performance.



### Multi solenoid valves control technology

Multi solenoid valves control technology in one system. All the solenoid valves equipped in the unit ensure temperature-control precisely, system running steadily and economic to provide a comfortable environment.



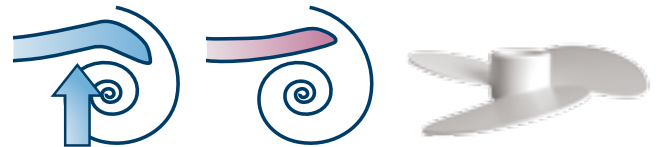
### Optimised fan grille

Optimised fan blade shape with new air outlet grille enhanced air flow volume which greatly improves fan performance and decreases noise. Also, a higher external static pressure has been achieved up to 60 Pa.



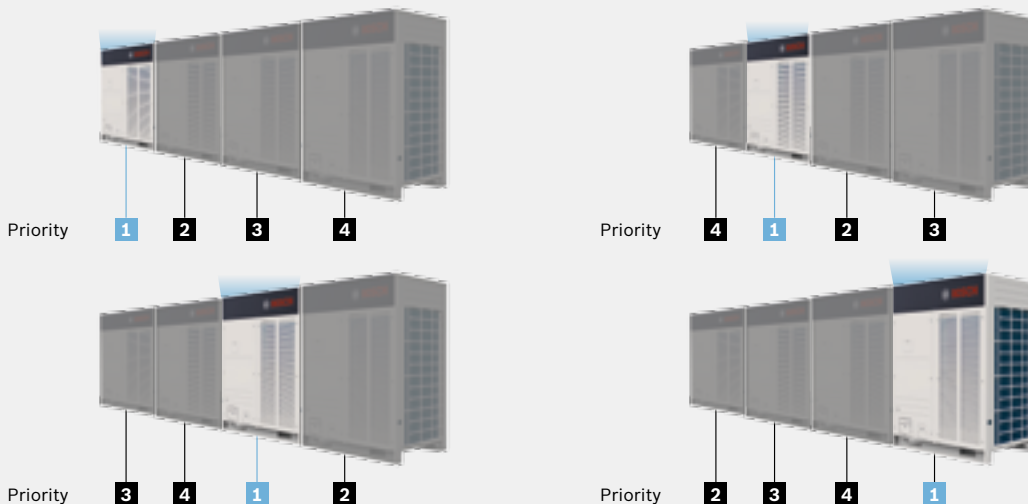
### New profile fan blade

A new blade with sharp edges and a slight curve increases the airflow rate and lowers vibration and airflow resistance.



### Cycle duty operation

In one combination, any of the outdoor units can run as the master unit and master unit can cycle in a period, to realise the equal lifespan among the outdoor units. As a result the system lifespan extends significantly.



### Backup operation

In a multiple system, if one module is failed, other modules can be backup instead of the failed one for continuing operation.

- Running state
- Stand by state
- Fault or stop state

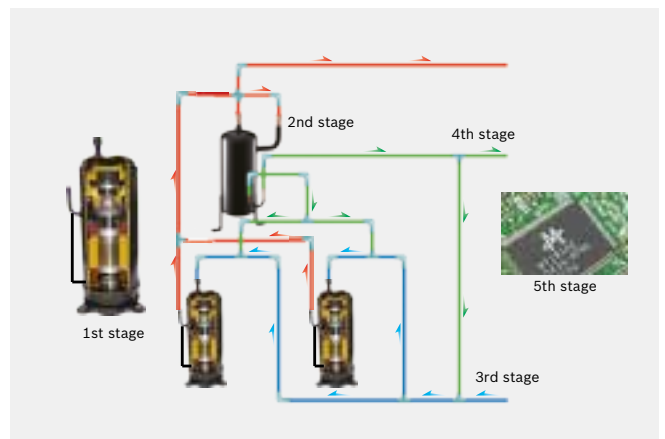


Start backup operation

### Precise oil control technology

5 stage oil control technology ensures every outdoor unit and compressor's oil always keeps to a safe level, completely preventing the lack of compressor oil.

- 1<sup>st</sup> stage:** compressor internal oil separate
- 2<sup>nd</sup> stage:** high efficiency oil separator (separation efficiency up to 99%)
- 3<sup>rd</sup> stage:** oil balance technology between compressors
- 4<sup>th</sup> stage:** oil balance technology between modules
- 5<sup>th</sup> stage:** intelligent system oil return program



### Anti corrosion treatment

Special anti corrosion treatment of the heat exchanger provides 5 to 6 times greater resistance against acid rain and salt corrosion.



The plastic grille protects against salt. All panel parts are corrosion resistant to protect against extreme ambient conditions.



Corrosion resistant heat-exchanger fins.



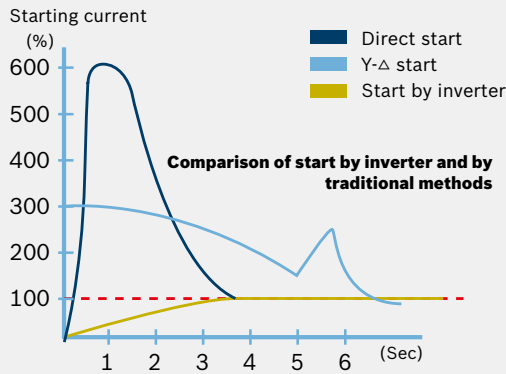
All screws are anti-rust.

All PCB parts in the unit are coated with double-sided moisture proof paint. The outer side of the control box metal cover is spray-painted.



## Double EXV control technology

Double EXV Control Technology in one system, each EXV part achieves 480 pulse to adjust flow precisely. Ensure the temperature-control precisely and steadily to provide a comfortable environment.

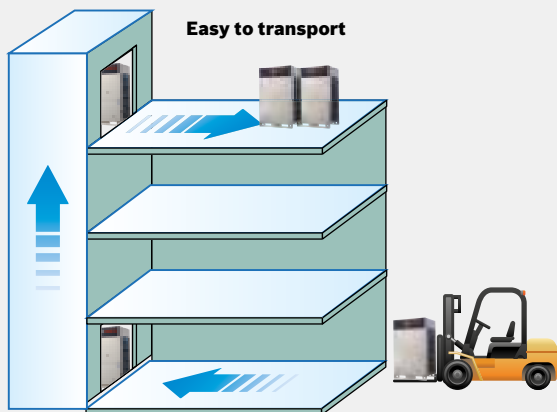
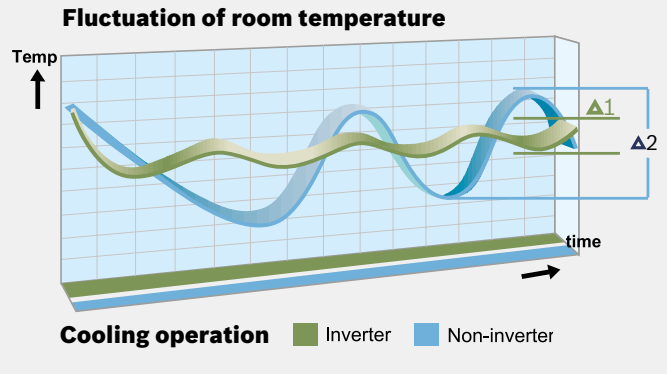


## Intelligent soft start technology

DC inverter compressor soft start function reduces strike to the electric network. This kind of high-performance and low sound scroll compressor operates at a faster rate when starting, reducing start-up time. It also helps the unit to quickly adjust the room temperature to the set level.

## Quick warm-up and cool-down design

By utilising the benefits of the inverter compressor, the system can reach full load quickly and shorten the warm-up and cool-down times to provide an immediate and comfortable air solution. Less temperature fluctuation will create a better living environment.



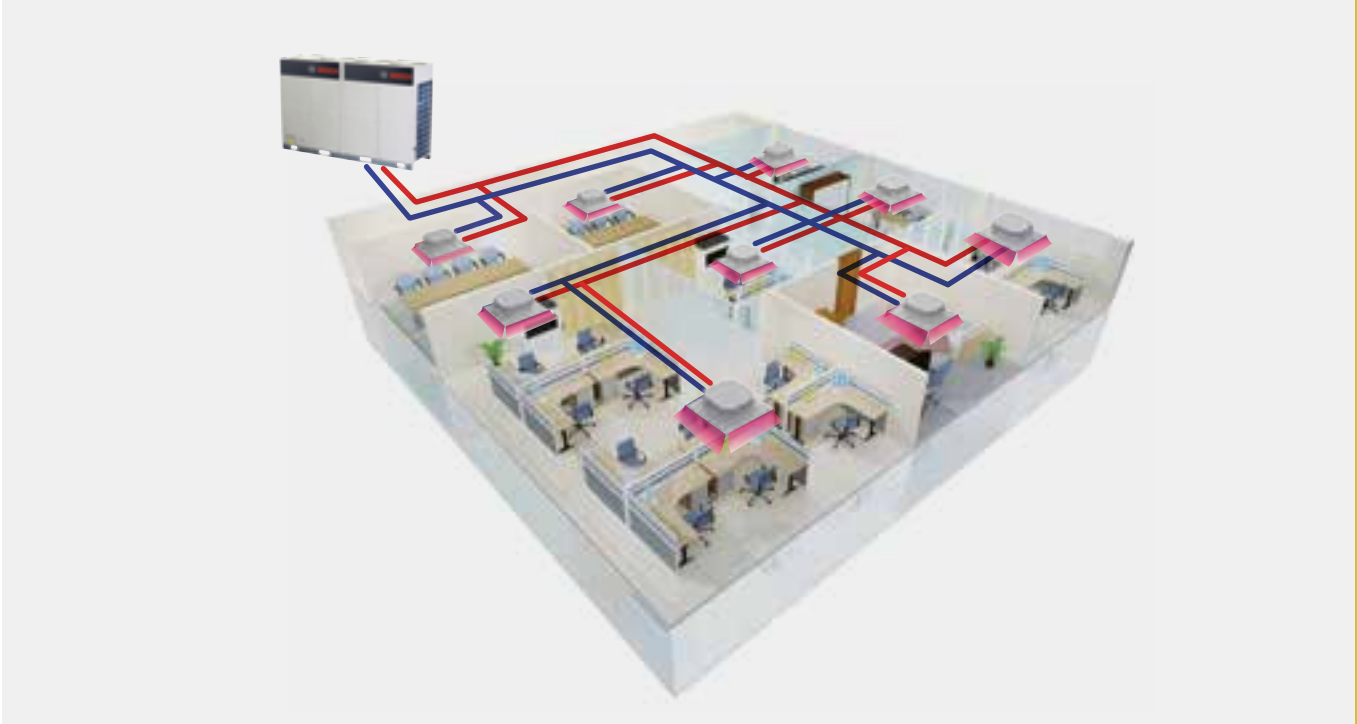
## Compact design for effective use of space

Compact size and light weight design minimises the installation footprint, reduces the installation floor load, and is easier for transportation. For some projects the units can even be transported through the elevator or forklift, reduce access problem at the job site.



# SDCI Series

## All DC Inverter Heat Pump



The Bosch SDCI Series VRF range is available in capacities from 8 HP/25kW to 72 HP/200kW in 2 HP increments. A maximum 64 indoor units, with a total capacity of up to 130% of the total system capacity, can be connected as one refrigeration system.

### Static pressures

The external static pressure for outdoor units is 0-20 Pa as standard but when required they can be customised up to 60 Pa for 12 HP models and 40 Pa for other models.

### Key features

- ▶ Cooling EER 4.29 (8 HP/25kW)
- ▶ Heating COP 4.39 (8 HP/25kW)
- ▶ Inverter driven scroll compressors
- ▶ All DC fan motors
- ▶ High performance heat exchanger
- ▶ Maximum pipe length 1,000m
- ▶ Maximum level difference 110m
- ▶ Intelligent soft start technology
- ▶ Quick response thanks to scroll compressor
- ▶ Night silent operation mode
- ▶ Intelligent defrosting for increased heat capacity.



# SDCI Series – Technical data

Model		SDCI 8HP/25kW-3	SDCI 10HP/28kW-3	SDCI 12HP/33kW-3	SDCI 14HP/40kW-3	SDCI 16HP/45kW-3	SDCI 18HP/50kW-3	
<b>Power supply</b>	V/Ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	
<b>Cooling</b>	Capacity	kW	25.2	28.0	33.5	40.0	50.0	
	Power input	kW	5.88	7.05	8.79	11.30	13.25	14.79
<b>Heating</b>	Capacity	kW	27	31.5	37.5	45.0	50.0	56.0
	Power input	kW	6.15	7.55	8.99	11.19	12.79	14.40
<b>Connectable indoor unit</b>	Total capacity	%	50–130	50–130	50–130	50–130	50–130	50–130
	Max. quantity		13	16	20	23	26	29
<b>Sound pressure level</b>		dB(A)	57	57	59	61	62	62
<b>Pipe connections</b>	Liquid pipe	mm	Φ9.53	Φ9.53	Φ12.7	Φ12.7	Φ12.7	Φ15.9
	Gas pipe	mm	Φ22.2	Φ22.2	Φ25.4	Φ25.4	Φ28.6	Φ28.6
	Oil balance pipe	mm	Φ6	Φ6	Φ6	Φ6	Φ6	Φ6
<b>Fan motor</b>	Type		DC	DC	DC	DC	DC	DC
	Quantity		1	1	2	2	2	2
	Air flow rate	m³/h	11,242	11,242	13,000	15,620	15,620	15,620
	Motor output	W	750	750	560+380	560+380	560+380	560+380
	ESP	Pa	0–20 (default)	0–20 (default)	0–20 (default)	0–20 (default)	0–20 (default)	0–20 (default)
		Pa	20–40 (customised)	20–40 (customised)	20–60 (customised)	20–40 (customised)	20–40 (customised)	20–40 (customised)
<b>DC inverter compressor</b>	Quantity		1	1	2	2	2	2
	Capacity	kW	31.59	31.59	31.59+11.80	31.59+11.80	31.59+11.80	31.59+11.80
	Crankcase heater	W	27.6×2	27.6×2	27.6×4	27.6×4	27.6×4	27.6×4
	Oil type		FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D
	Oil charge	ml	500	500	500+500	500+500	500+500	500+500
<b>Refrigerant</b>	Type		R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
	Factory charging	kg	10	10	12	15	15	17
<b>Design pressure (High/Low)</b>		MPa	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6
<b>Net dimension (W×H×D)</b>		mm	960×1,615×765	960×1,615×765	1,250×1,615×765	1,250×1,615×765	1,250×1,615×765	1,250×1,615×765
<b>Packing size (W×H×D)</b>		mm	1,025×1,790×830	1,025×1,790×830	1,305×1,790×820	1,305×1,790×820	1,305×1,790×820	1,305×1,790×820
<b>Net weight</b>		kg	212	212	288	288	288	310
<b>Gross weight</b>		kg	227	227	308	308	308	330
<b>Operating temperature range</b>	Cooling	°C	-5-48	-5-48	-5-48	-5-48	-5-48	-5-48
	Heating	°C	-20-24	-20-24	-20-24	-20-24	-20-24	-20-24
<b>MFA</b>		Amps	25	25	35	25	35	45
<b>MCA</b>		Amps	18.4	20.6	29.3	27.9	33.4	40.1
<b>Performance</b>	EER	–	4.29	3.89	3.81	3.54	3.40	3.38
	COP	–	4.39	4.17	4.17	4.02	3.91	3.89
	ESEER	–	7.52	7.49	7.11	6.68	6.38	6.37

## Notes:

Capacities are based on the following conditions:

Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB.

Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB.

Piping length: Piping length is 7.5m, level difference is zero.

Connection piping diameter is based on the condition that the total equivalent liquid length is less than 90m.

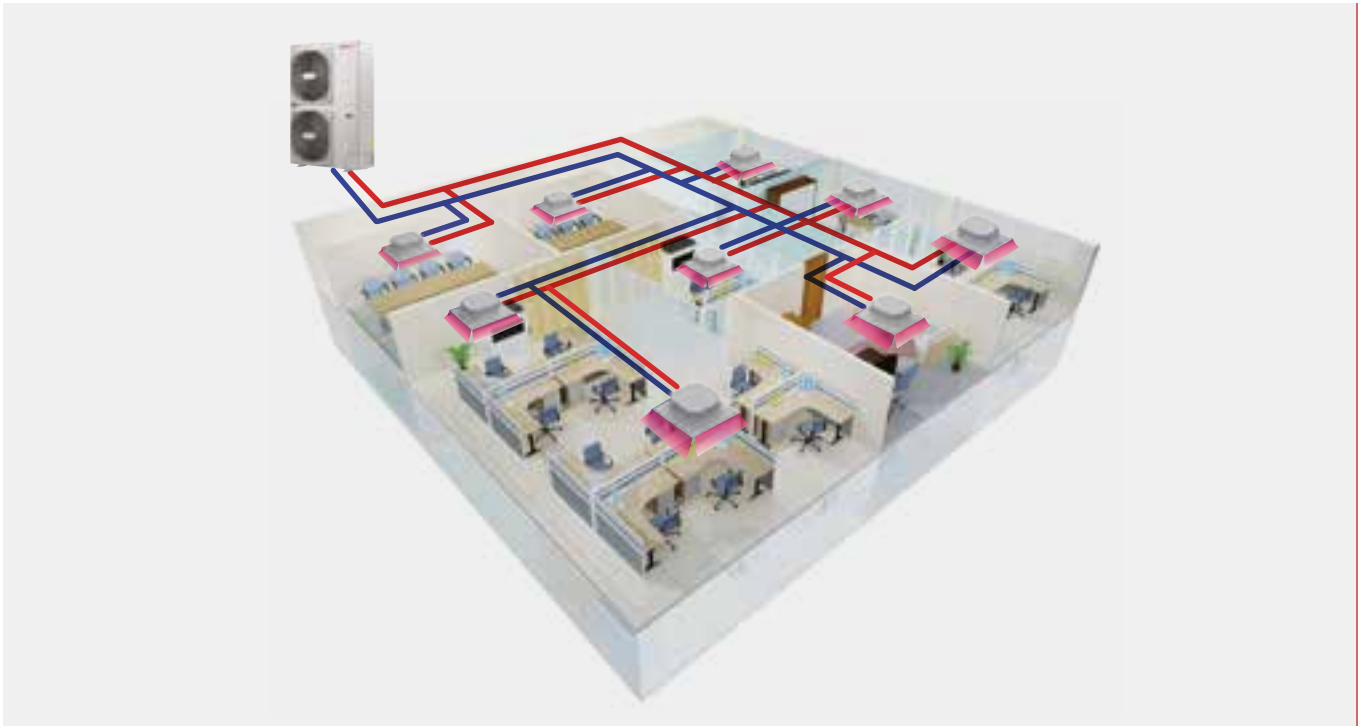
When the total equivalent liquid length is more than 90m, please refer to technical manual to choose the connection piping diameter.

Sound values are measured in a semi-anechoic room, at a position 1m in front of the unit and 1.3m above the floor.

ESEER = 0.03\*EER(35 OC-%100) + 0.33\*EER(30 OC-%75) + 0.41\*EER(25 OC-%50) + 0.23\*EER(20 OC-%25).

# MDCI Series

## All DC Inverter Mini VRF



The Bosch Climate 5000 VRF MDCI Mini VRF Series delivers a highly efficient solution for small commercial and high-end residential buildings (4-12 rooms) from a single outdoor unit, with individual control in each room. Outdoor units range in capacity from 8kW to 26kW.

### Key features

- ▶ Cooling EER 3.9 (8kW)
- ▶ Heating COP 4.02 (9kW)
- ▶ Inverter driven scroll compressors
- ▶ Space-saving design
- ▶ Low noise operation
- ▶ Maximum pipe length 120m
- ▶ Maximum level difference between indoor units 8m
- ▶ High performance heat exchanger.



# MDCI Series – Technical data

Model			MDCI8-1	MDCI10-1	MDCI12-1/ MDCI12-3	MDCI14-1/ MDCI14-3	MDCI16-1/ MDCI16-3
<b>Power supply</b>		V/Ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50 380-415/3/50	220-240/1/50 380-415/3/50	220-240/1/50 380-415/3/50
<b>Cooling</b>	Capacity	kW	8	10.5	12.3	14	15.5
	Input	kW	2.05	2.68	3.25	3.95	4.52
<b>Heating</b>	Capacity	kW	9	11.5	13.2	15.4	17.0
	Input	kW	2.24	2.90	3.47	4.16	4.77
<b>Connectable indoor unit</b>	Total capacity	%	45–130	45–130	45–130	45–130	45–130
	Max. quantity		4	5	6	6	7
<b>Sound pressure level</b>		dB(A)	56	57	57	57	57
<b>Pipe connections</b>	Liquid pipe	mm	Φ9.53	Φ9.53	Φ9.53	Φ9.53	Φ9.53
	Gas pipe	mm	Φ15.9	Φ15.9	Φ15.9	Φ15.9	Φ19.1
<b>Fan motor</b>	Type		DC	DC	DC	DC	DC
	Quantity		1	1	2	2	2
	Air flow rate	m <sup>3</sup> /h	5,500	5,500	6,000	6,000	6,000
	Motor output	W	170	170	85x2	85x2	85x2
<b>Compressor</b>	Quantity		1	1	1	1	1
	Capacity	kW	7	7	10	10	14
	Crankcase heater	W	25	25	25	25	25
	Oil type		FV50S	FV50S	FV50S	FV50S	FV50S
	Oil charge	ml	670+200	670+200	870+630	870+630	1400+250
<b>Refrigerant</b>	Type		R-410A	R-410A	R-410A	R-410A	R-410A
	Factory charging	kg	2.8	2.95	3.3	3.9	3.9
<b>Design pressure (High/Low)</b>		MPa	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6
<b>Net dimension (W×H×D)</b>		mm	1,075×966×396	1,075×966×396	900×1,327×400	900×1,327×400	900×1,327×400
<b>Packing size (W×H×D)</b>		mm	1,120×1,100×435	1,120×1,100×435	1,030×1,456×435	1,030×1,456×435	1,030×1,456×435
<b>Net weight</b>		kg	75.5	75.5	95	99	100
<b>Gross weight</b>		kg	85.5	85.5	105	109	110
<b>Operating temperature range</b>	Cooling	°C	-15~43	-15~43	-15~43	-15~43	-15~43
	Heating	°C	-15~27	-15~27	-15~27	-15~27	-15~27
<b>MFA</b>		Amps	30	30	40	40	63
<b>Performance</b>	EER	–	3.90	3.92	3.78	3.54	3.43
	COP	–	4.02	3.97	3.80	3.70	3.56

## Notes:

Capacities are based on the following conditions:

Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB.

Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB.

Piping length: Piping length is 5m, level difference is zero.

Sound values are measured in a semi-anechoic room, at a position 1m in front of the unit and 1m above the floor.

Model			MDCI18-3	MDCI20-3	MDCI22-3	MDCI26-3
<b>Power supply</b>	V/Ph/Hz		220-240/1/50 380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50
<b>Cooling</b>	Capacity	kW	17.5	20	22.4	26
	Input	kW	5.30	6.1	6.8	7.6
<b>Heating</b>	Capacity	kW	19.0	22	24.5	28.5
	Input	kW	5.00	6.1	5.9	6.8
<b>Connectable indoor unit</b>	Total capacity	%	45–130	50–130	50–130	50–130
	Max. quantity		9	10	11	12
<b>Sound pressure level</b>		dB(A)	59	59	59	60
<b>Pipe connections</b>	Liquid pipe	mm	Φ9.53	Φ9.53	Φ9.53	Φ9.53
	Gas pipe	mm	Φ19.1	Φ19.1	Φ19.1	Φ22.2
<b>Fan motor</b>	Type		DC	DC	DC	DC
	Quantity		2	2	2	2
	Air flow rate	m³/h	6,800	10,999	10,494	10,494
	Motor output	W	85x2	210 (up)/160 (down)	200 (up)/150 (down)	200 (up)/150 (down)
<b>Compressor</b>	Quantity		1	1	1	1
	Capacity	kW	14	13.98	16.86	16.86
	Crankcase heater	W	25	25	25	25
	Oil type		FV50S	FV50S	FV50S	FV50S
	Oil charge	ml	1400+250	1400+1300	1700+1500	1700+1500
<b>Refrigerant</b>	Type		R-410A	R-410A	R-410A	R-410A
	Factory charging	kg	4.5	4.8	6.2	6.2
<b>Design pressure (High/Low)</b>		MPa	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6
<b>Net dimension (W×H×D)</b>		mm	900×1,327×400	1,120×1,558×528	1,120×1,558×528	1,120×1,558×528
<b>Packing size (W×H×D)</b>		mm	1,030×1,456×435	1,270×1,720×565	1,270×1,720×565	1,270×1,720×565
<b>Net weight</b>		mm	107	137	146.5	147
<b>Gross weight</b>		mm	118	153	162.5	163
<b>Operating temperature range</b>	Cooling	°C	-15~43	-15~46	-15~46	-15~46
	Heating	°C	-15~27	-15~24	-15~24	-15~24
<b>MFA</b>		Amps	30	30	30	40
<b>Performance</b>	EER	–	3.30	3.28	3.29	3.42
	COP	–	3.80	3.61	4.15	4.19

**Notes:**

Capacities are based on the following conditions:

Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB.

Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB.

Piping length: Piping length is 5m, level difference is zero.

Sound values are measured in a semi-anechoic room, at a position 1m in front of the unit and 1m above the floor.

## RDCI Series

### All DC Inverter Heat Recovery



The Bosch Climate 5000 VRF heat recovery RDCI Series offers simultaneous cooling and heating operation in one three-pipe system. Using a balanced heat exchanger, the energy by-product from cooling or heating is transferred to where it is required. The result is significant energy savings when heating and cooling are required in different parts of the building at the same time – up to 50% compared to a conventional heat pump system.

#### Simultaneous heating and cooling

Simultaneous heating and cooling is achieved by the new SBOX unit, which controls the solenoid valve to ensure precise control of refrigerant flow rate. Both indoor and outdoor units are connected to the SBOX.

RDCI systems can be set to ‘auto mode’ control, whereby the indoor unit can change the operation mode, switching between heating and cooling as required, to maintain a constant indoor temperature.

#### Key features

- ▶ Three-pipe VRF system
- ▶ Simultaneous heating and cooling
- ▶ ESEER 7.44 on 8HP/25kW
- ▶ Inverter driven scroll compressors
- ▶ All DC fan motors
- ▶ High performance heat exchanger
- ▶ Maximum pipe length 1,000m
- ▶ Maximum level difference 110m
- ▶ Intelligent soft start technology
- ▶ Quick response thanks to scroll compressor
- ▶ Night silent operation mode
- ▶ Continuous heating during defrost operation.



# RDCI Series – Technical data

Model		RDCI 8/25-3	RDCI 10/28-3	RDCI 12/33-3	RDCI 14/40-3	RDCI 16/45-3	
<b>Power supply</b>	V/Ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	380-415/3/50	
<b>Cooling</b>	Capacity	kW	25.2	28.0	33.5	40.0	45.0
	Power input	kW	5.73	6.67	8.07	11.30	13.24
<b>Heating</b>	Capacity	kW	27.0	31.5	37.5	45.0	50.0
	Power input	kW	6.00	7.33	8.72	11.19	12.79
<b>Connectable indoor unit</b>	Total capacity	%	50–130	50–130	50–130	50–130	50–130
	Max. quantity		13	16	20	23	26
<b>Sound pressure level</b>		dB(A)	57	57	58	60	60
<b>Pipe connections</b>	Liquid pipe	mm	Φ9.53	Φ12.7	Φ12.7	Φ15.9	Φ15.9
	Low pressure gas pipe	mm	Φ22.2	Φ22.2	Φ25.4	Φ28.6	Φ28.6
	High pressure gas pipe	mm	Φ19.1	Φ19.1	Φ19.1	Φ22.2	Φ22.2
	High pressure gas balance pipe	mm	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1
	Oil balance pipe	mm	Φ6	Φ6	Φ6	Φ6	Φ6
<b>Fan motor</b>	Type		DC	DC	DC	DC	DC
	Quantity		2	2	2	2	2
	Air flow rate	m <sup>3</sup> /h	12,000	12,000	13,000	15,000	15,000
	Motor output	W	420	420	420	750	750
	ESP	Pa	0–20 (default)	0–20 (default)	0–20 (default)	0–20 (default)	0–20 (default)
		Pa	20–60 (customised)	20–60 (customised)	20–60 (customised)	20–40 (customised)	20–40 (customised)
<b>DC inverter compressor</b>	Quantity		1	1	1	2	2
	Capacity	kW	31.59	31.59	31.59	31.59+11.80	31.59+11.80
	Crankcase heater	W	30×2	30×2	30×2	30×4	30×4
	Oil type		FVC68D	FVC68D	FVC68D	FVC68D	FVC68D
	Oil charge	ml	500	500	500	500+500	500+500
<b>Refrigerant</b>	Type		R-410A	R-410A	R-410A	R-410A	R-410A
	Factory charging	kg	10	10	10	13	13
<b>Design pressure (High/Low)</b>		MPa	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6
<b>Net dimension (W×H×D)</b>		mm	1,250×1,615×765	1,250×1,615×765	1,250×1,615×765	1,250×1,615×765	1,250×1,615×765
<b>Packing size (W×H×D)</b>		mm	1,305×1,790×820	1,305×1,790×820	1,305×1,790×820	1,305×1,790×820	1,305×1,790×820
<b>Net weight</b>		kg	255	255	255	303	303
<b>Gross weight</b>		kg	273	273	273	322	322
<b>Operating temperature range</b>	Cooling	°C	-5-48	-5-48	-5-48	-5-48	-5-48
	Heating	°C	-20-24	-20-24	-20-24	-20-24	-20-24
	Simultaneous cooling and heating	°C	-5~24	-5~24	-5~24	-5~24	-5~24
<b>MFA</b>		Amps	25	25	25	35	35
<b>MCA</b>		Amps	18.4	20.6	21.8	27.9	33.4
<b>Performance</b>	EER	–	4.40	4.20	4.15	3.54	3.40
	COP	–	4.50	4.30	4.30	4.02	3.91
	ESEER	–	7.44	7.40	7.30	6.68	6.38

## Notes:

Capacities are based on the following conditions:

Cooling: Indoor temperature 27°C DB/19°C WB; Outdoor temperature 35°C DB/24°C WB.

Heating: Indoor temperature 20°C DB/15°C WB; Outdoor temperature 7°C DB/6°C WB.

Piping length: Piping length is 7.5m, level difference is zero.

Connection piping diameter is based on the condition that the total equivalent liquid length is less than 90m.

When the total equivalent liquid length is more than 90m, please refer to technical manual to choose the connection piping diameter.

Sound values are measured in a semi-anechoic room, at a position 1m in front of the unit and 1.3m above the floor.

ESEER = 0,03\*EER(35 OC-%100) + 0,33\*EER(30 OC-%75) + 0,41\*EER(25 OC-%50) + 0,23\*EER(20 OC-%25).

## New design **SBOX**

The RDCI Series features a uniquely designed SBOX Switch Box for connection of multiple indoor units. The new SBOX is lighter and more compact than other brands, with lower noise levels compared to 4-way valve switching.

The system offers high energy efficiency by extracting heat from the rooms which are to be cooled and effectively using it as a heat source for the rooms which require heating.

Models are available with 1, 2, 4 and 6 ports and branch piping can be connected to each port.

Bus-type connection is available for up to 24 indoor units (6-port version). Indoor units are controlled in groups (maximum 4 per group), with each group/zone able to operate in a different mode to other groups connected to the same SBOX.

### Key features

- ▶ Zoned control of multiple indoor units from each SBOX
- ▶ Comprehensive range of options
- ▶ Internal solenoid valves
- ▶ Improved sub-cooling circuit through built-in EEVs
- ▶ Low noise
- ▶ Height of just 225mm.





# SBOX

## Specifications

### SBOX Unit which can be connected multiple indoor units

Model	SBOX01-1	SBOX02-1	SBOX04-1	SBOX06-1			
<b>Max. indoor unit groups</b>	1	2	4	6			
<b>Max. number of each group indoor units</b>	4	4	4	4			
<b>Max. number of all downstream indoor units</b>	4×1=4	4×2=8	4×4=16	4×6=24			
<b>Max. capacity of each group indoor units</b>	kW	16	16	16			
<b>Total capacity of all downstream indoor units</b>	kW	≤16	≤28	≤45			
<b>Piping connections</b>	Connect to outdoor unit	Liquid pipe	mm	Φ9.53	Φ12.7	Φ15.9	Φ15.9
		High pressure gas pipe	mm	Φ15.9	Φ19.1	Φ22.2	Φ22.2
		Low pressure gas pipe	mm	Φ19.1	Φ25.4	Φ31.8	Φ31.8
	Connect to indoor unit	Liquid pipe	mm	Φ9.53	Φ9.53	Φ9.53	Φ9.53
		Gas pipe	mm	Φ15.9	Φ15.9	Φ15.9	Φ15.9
	<b>Sound pressure level</b>		dB(A)	33	33	33	40
<b>Net dimension (W×H×D)</b>		mm	630×225×600	630×225×600	960×225×600	960×225×600	
<b>Packing size (W×H×D)</b>		mm	725×325×685	725×325×685	1055×325×685	1055×325×685	
<b>Net weight</b>		kg	18	19.5	31	35	
<b>Gross weight</b>		kg	25	27	40	44.5	

### SBOX Unit which can be connected only one indoor unit

Model	SBOX02E-1	SBOX04E-1			
<b>Max. number of all downstream indoor units</b>	1	1			
<b>Capacity of downstream indoor unit</b>	kW	20 ~ 28	40 ~ 56		
<b>Piping connections</b>	Connect to outdoor unit	Liquid pipe	mm	Φ12.7	Φ15.9
		High pressure gas pipe	mm	Φ19.1	Φ22.2
		Low pressure gas pipe	mm	Φ25.4	Φ31.8
	Connect to indoor unit	Liquid pipe	mm	Φ9.53	Φ9.53
		Gas pipe	mm	Φ15.9	Φ15.9
	<b>Sound pressure level</b>		dB(A)	33	33
<b>Net dimension (W×H×D)</b>		mm	630×225×600	960×225×600	
<b>Packing size (W×H×D)</b>		mm	725×325×685	1055×325×685	
<b>Net weight</b>		kg	19.5	31	
<b>Gross weight</b>		kg	27	40	

#### Notes:

Sound values are measured in a semi-anechoic room, at a position 1m below the SBOX in mode switch condition. It is not recommended to install in the place where high noise performance is required.

# Bosch Climate 5000 VRF

## Indoor units

The Bosch Climate 5000 range offers a wide selection of indoor units to suit all spaces.



### High wall mounted

For optimal comfort, wall mounted indoor units are equipped with an auto swing louvre function that ensures the air direction corresponds to the selected mode. Three air speeds are available – low, medium and high – and low noise with minimum turbulence are provided by the multi-blade fan and air guide design.

- ▶ Unique Bosch panel design
- ▶ 9 different capacities up to 9kW
- ▶ Integrated electronic expansion valve
- ▶ Washable air filter
- ▶ Easy piping connection from left, right or rear
- ▶ Auto swing function
- ▶ Auto-restart function
- ▶ Infrared remote controller as standard.



### Compact cassette

The discreet design of this compact cassette requires little installation height, while the light weight ensures all models can be installed without a hoist. It also features a sub-duct that enables a smaller adjacent space to be conditioned by the same unit.

- ▶ Unique honeycomb panel design
- ▶ Perfect fit for 60x60 modular ceiling
- ▶ Low profile design (26cm) for all capacities
- ▶ 360° round air flow for optimum distribution
- ▶ Washable air filter
- ▶ Integrated, low profile (500mm) condensate pump
- ▶ Auto restart function
- ▶ Fresh air connection up to 15% of total air flow
- ▶ Infrared remote controller as standard.



### 4-way cassette

The versatile 4-way cassette offers seven discharge patterns in two to four directions to suit the requirements of any shape of room, with the option of duct connection for even more flexible design. Noise levels are low due to advanced designs for the fan blade, air deflector and built-in throttling component.

- ▶ Unique honeycomb panel design
- ▶ Advanced 3D spiral fan design
- ▶ Low profile (23-30cm) design
- ▶ Duct connection available
- ▶ Washable air filter
- ▶ Integrated low profile (750mm) condensate pump
- ▶ Auto restart function
- ▶ Fresh air connection up to 15% of total air flow
- ▶ Infrared remote controller as standard.



### Ceiling/floor mounted

Suitable for ceiling (horizontal) and floor (vertical) mounting, these indoor units provide two-direction auto swing in both vertical and horizontal planes. Their broad horizontal air discharge ensures wide airflow distribution, with high double air guides and a choice of low, medium or high fan speeds.

- ▶ Ideal solution for spaces without false ceiling
- ▶ Choice of 8 capacities
- ▶ Discreet profile (66-68cm)
- ▶ Built in EEV (electronic expansion valve)
- ▶ Washable air filter
- ▶ Auto restart function
- ▶ Infrared remote controller as standard.



### Slim duct type

Slim duct type indoor units feature an ultra-slim design that is ideal for low ceiling spaces, such as in hotel room lobbies. A four speed fan provides optimum flexibility for comfort, accessible through the standard wired remote controller.

- ▶ Ideal solution for hotel rooms
- ▶ Up to 30Pa ESP available (standard = 10Pa)
- ▶ Ultra slim design (21cm height) for all capacities
- ▶ Built in EEV (electronic expansion valve)
- ▶ Washable air filter
- ▶ Integrated, low profile (750mm) condensate pump
- ▶ Auto restart function
- ▶ Air inlet from bottom or rear of unit
- ▶ Wired remote controller as standard
- ▶ 4 speed fan (SH/H/M/L).



### Standard duct type

These duct-fitted indoor units are specially designed for VRF ducted applications, with a slim design for ease of installation in the ceiling void. They feature a four speed fan motor and have the ability to change the external static pressure through the wiring connection.

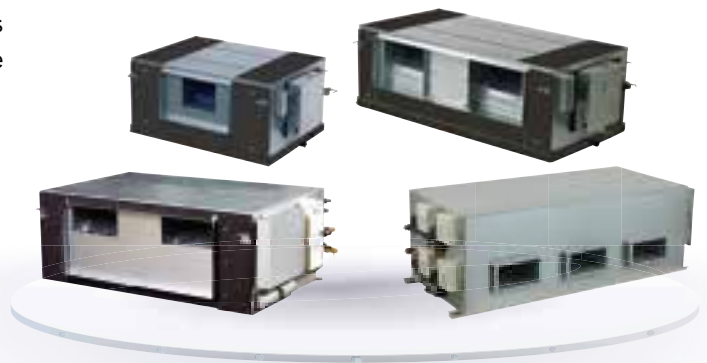
- ▶ Ideal solution for VRF duct applications
- ▶ Up to 100Pa ESP available
- ▶ Slim design (27-30cm height)
- ▶ Built in EEV (electronic expansion valve)
- ▶ Washable air filter
- ▶ Integrated, low profile (750mm) condensate pump
- ▶ Auto restart function
- ▶ Air inlet from bottom or rear of unit
- ▶ Wired remote controller as standard
- ▶ 4 speed fan (SH/H/M/L).



### High static pressure duct type

The high static pressure duct type indoor units are designed for use with external static pressures up to 196Pa (models 71-160) or 280Pa (models 200-560), making them suitable for applications with long runs of ductwork.

- ▶ Ideal for long ductwork runs
- ▶ Up to 280Pa ESP available
- ▶ Heights range from 42-67cm
- ▶ Washable air filter
- ▶ Auto restart function
- ▶ Wired remote controller as standard
- ▶ 3 speed fan (H/M/L).



# Climate 5000 VRF controller options

## Key features

- ▶ Up to 4 interfaces, 64 refrigerant systems, 1,024 indoor units, and 256 outdoor units be controlled from one PC
- ▶ Online access
- ▶ User friendly operation
- ▶ Central building monitoring and control
- ▶ Energy savings through enhanced management
- ▶ SMS modem (optional)
- ▶ Electricity charge distribution
- ▶ Schedule management
- ▶ Low-load operation indicator
- ▶ Generation of operational history reports (daily, weekly, monthly)
- ▶ Fault display and warning message
- ▶ Air filter cleaning reminding function
- ▶ Emergency stop and alarm signal output.



The Bosch Climate 5000 also includes a wide selection of controller options for different applications.

### Individual controllers

Individual controller options include infrared remote control and wired remote control. Both controllers provide the user with control over operating mode, indoor temperature, fan speed and swing function. The wired remote controller also incorporates a 'follow me' function. There is also a wired remote control especially designed for use in hotel rooms, with a limited set of functions.

### Centralised controllers

The centralised remote controllers are able to control up to 64 indoor units (except MDCI series). The CC-WT version also includes a 7-day weekly schedule setting. Centralised controllers can be connected from the indoor side or the outdoor side.

### Building management system (BMS) gateways

Bosch Climate 5000 VRF systems can be connected to building management systems using LonWorks, Modbus and BACnet protocols.

### Bosch VRF Intelligent Manager (BVIM)

The BVIM provides a single interface control for up to 256 indoor units and four BVIM interfaces can be combined for control of up to 1024 indoor units. Designed specifically to control VRF systems, the Intelligent Manager is based around a centralised format and dedicated to the complete control and monitoring of all the system's functions. It can be used as a flexible multi-purpose system and applied to a variety of needs, according to the scale, purpose and control method of each building. The BVIM can run on Windows XP, 7 and 8, enabling monitoring and control of the air conditioning from any location using a browser on PC, tablet or smartphone. Remote access through DSL and VPN and an SMS modem (optional) is also available. The system monitors individual indoor units, storing operational data for accessing via multiple systems, complete with graphical displays. BVIM software can also be used to generate tenant reports and support billing for energy consumption.

### Patented electricity charge distribution

The BVIM system incorporates Bosch's patented electricity charge distribution calculation model, which provides information on proportional electrical power distribution to optimise the management of electricity consumption.

The software is used to calculate electric power proportional distribution, output and save electricity consumption data for each indoor unit (or group) which is connected to the intelligent manager.

It then applies the patented Bosch Calculation Method to calculate consumption rates according to capacity demand, which is based on various parameters that include set point temperature, room temperature, running mode, rated HP, public areas, unused rooms, and night time use. This information is then output on a charge calculation sheet for charging tenants based on their actual power consumption, rather than simply dividing the total bill based on space occupied – in compliance with European legislation.

### Hotel card interface module

The hotel card interface module is designed to integrate with the hotel key card system, helping to ensure that no energy is wasted through comfort control systems being left running in unoccupied rooms.

### Infrared sensing controller

The stylish infrared sensing controller enables the room environment to be automatically adjusted in relation to occupancy. It is easy to install on walls or ceilings and has a detection range of up to 100 degrees at distances up to 4m horizontal and 3m vertical.



### IRC control features

- ▶ Operating mode: cool, heat, dry, fan only and auto
- ▶ Timer setting function in 24 hours
- ▶ Indoor setting temperature range: 17-30°C
- ▶ LCD of all functions
- ▶ Night Light Function
- ▶ Fan speed (Auto/Low/Medium/High)
- ▶ Swing function (if available for indoor unit)
- ▶ Eco Mode
- ▶ Air Direction (if available for indoor unit).

# Comprehensive service: Nationwide and close to you

Our aim is to deliver world class customer service ensuring maximum availability and efficiency of your Bosch system. Our highly skilled service technicians are fully trained on all of the products that we supply. Our focus is to ensure that your equipment is operating safely and in accordance with the applicable regulations and manufacturer's instructions.

## Nationwide

Our Bosch service engineers are located nationwide and are there to support you should you need us to maintain your boiler or if you have any issues.

Should a technical issue arise we are there to provide immediate technical support minimising downtime.

## Contact Centre

Open 364 days per year we have a dedicated UK contact centre team who can handle all of your enquiries ranging from, spare parts, maintenance, breakdowns, commissioning visits or any other general support.

Our contact centre is open 7 days per week, from:

- ▶ 7am till 8pm Monday to Friday
- ▶ 8am till 5pm on Saturdays
- ▶ 9am till 12 midday Sundays
- ▶ 8am till 4:30pm on Bank Holidays.

## Training

All of our experienced service technicians are directly employed by Bosch UK. They are trained on all Bosch products and components and hold industry recognised qualifications.

## Equipment

As the original manufacturer, we have the facility to capture and record all relevant information relating to your boiler, from point of manufacture, including all service and maintenance activities, and throughout its entire life.











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Bosch Thermotechnology Ltd. has a policy of continuous research and development and this may necessitate alterations to this specification from time to time. Therefore before preparing for the installation of the appliance it is important that the instructions issued with the unit are carefully read and adhered to. The statutory rights of the customer are not affected. Photographs shown are used for illustrative purpose only. All information is correct at time of going to press. Bosch Thermotechnology Ltd. reserves the right to alter any information where necessary. E&OE.